

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A method for improving burst acquisition in a digital communication device comprising:
 - receiving a signal; and
 - performing a sync word search on said signal;
 - wherein said sync word search includes performing a hybrid synchronization technique, said hybrid synchronization technique including both a lower order modulation detection and correlation process, and a higher order modulation detection and correlation process; and
 - comparing a result from said lower order modulation and correlation process to a result of said higher order modulation and correlation process.
2. (original) The method of claim 1, wherein said lower order modulation detection and correlation process comprises performing a biphase shift keying (BPSK) sync word correlation process.
3. (original) The method of claim 1, wherein said higher order modulation detection and correlation process comprises performing a quadrature phase shift keying (QPSK) sync word correlation process.
4. (currently amended) The method of claim 1, further comprising using [[a]]said result of said higher order modulation detection and correlation process to modify [[a]]said result of said lower order modulation detection and correlation process.
5. (currently amended) The method of claim 4, wherein said result of said higher order modulation detection and correlation process is utilized to supersede [[a]]said result of said lower order modulation detection and correlation process.

6. (currently amended) The method of claim 5, ~~further comprising: comparing a result from a DBPSK correlation to a result from a CQPSK correlation; and~~ wherein if said result from said CQPSK correlation comprises a CQPSK sync word result, using said CQPSK sync word correlation result to demodulate said burst.
7. (currently amended) The method of claim 5[[6]], further comprising using a sync word result from said DBPSK correlation if said result from said CQPSK correlation is not a sync word result.
8. (original) The method of claim 1, further comprising performing said lower order modulation detection and correlation process prior to said higher order modulation detection and correlation process.
9. (original) The method of claim 1, further comprising performing a squelching function on said received signal prior to said sync word search.
10. (original) The method of claim 1, wherein said sync word search is not performed until a multi-step burst detection process detects a burst.
11. (currently amended) A method for improving burst detection in a digital receiver device, comprising:
receiving a signal; and
performing a multi-step burst detection process on said signal;
wherein the multi-step detection process further comprises:
measuring a signal energy;
comparing said signal energy to a designated signal energy threshold value;
measuring a signal carrier to noise plus interference ratio (CIR);
comparing said CIR measurement to a designated CIR threshold value; and
signaling a valid burst detection if said signal energy exceeds said designated signal energy threshold value for a first predetermined period of time and said CIR exceeds said designated CIR threshold value for a second predetermined period of time, wherein said first

predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration.

12. (canceled)

13. (previously presented) The method of claim 11, wherein said designated signal energy threshold value comprises a first signal energy threshold that is utilized to detect a presence of said signal if said signal is currently undetected, and a second signal energy threshold that is utilized to detect the absence of said signal if said signal is currently detected.

14. (previously presented) The method of claim 11, wherein said designated CIR threshold value comprises a first CIR threshold that is utilized to detect the presence of said signal if said signal is currently undetected, and a second CIR threshold that is utilized to detect the absence of said signal if said signal is currently detected.

15. (canceled)

16. (currently amended) A digital communications system comprising:

a tuner; and

a demodulator;

wherein said demodulator is configured to receive a signal and perform a hybrid sync word search synchronization technique on said signal, said hybrid synchronization technique including both a lower order modulation detection and correlation process, and a higher order modulation detection and correlation process, and said hybrid synchronization technique further includes comparing a result from said lower order modulation and correlation process to a result of said higher order modulation and correlation process.

17. (original) The digital communications system of claim 16, wherein said lower order modulation detection and correlation process comprises a biphase shift keying (BPSK) sync word correlation process and said higher order modulation detection comprises a quadrature phase shift keying (QPSK) sync word correlation process.

18. (currently amended) The digital communications system of claim 16, wherein said system is further configured to use [[a]]said result of said higher order modulation detection and correlation process to modify [[a]]said result of said lower order modulation detection and correlation process.

19. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform said lower order modulation detection and correlation process prior to said higher order modulation detection and correlation process.

20. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform a squelching function on said received signal prior to said sync word search.

21. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform said sync words search only after a multi-step burst detection process detects a burst.

22. (currently amended) A digital communications system comprising:
a tuner; and
a demodulator; wherein said demodulator is configured to receive a signal and perform a multi-step burst detection process on said received signal wherein the multi-step burst detection process further comprises:

- measuring a signal energy;
- comparing said signal energy to a programmable signal energy threshold value;
- measuring a signal carrier to noise plus interference ratio (CIR);
- comparing said CIR measurement to a programmable CIR threshold value; and
- signaling a valid burst detection if said signal energy exceeds said designated signal energy threshold value for a first predetermined period of time and said CIR exceeds said designated CIR threshold value for a second predetermined period of time, wherein said first

predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration.

23. (canceled)

24. (previously presented) The digital communications system of claim 22, wherein said programmable signal energy threshold value comprises a first signal energy threshold that is utilized to detect a presence of said signal if said signal is currently undetected, and a second signal energy threshold that is utilized to detect the absence of said signal if said signal is currently detected.

25. (previously presented) The digital communications system of claim 22, wherein said programmable CIR threshold value comprises a first CIR threshold that is utilized to detect the presence of said signal if said signal is currently undetected, and a second CIR threshold that is utilized to detect the absence of said signal if said signal is currently detected.

26. (canceled)

27. (original) The digital communications system of claim 22, wherein said system comprises a digital receiver.